



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

ARCHEOLOGY AND ETHNOLOGY.¹

Dr. Brinton on the Beginning of Man.²—Dr. Brinton contributes a characteristically readable and inconsistent article to the *Forum* on this subject, which is the most important and interesting among the many presented by the science of biology. It is also at the same time a prime question among archeologists, but as the archeological materials do not lend themselves to its solution, the cultivators of that science have not generally devoted much time to its investigation. Archeology begins, as Dr. Brinton says, with the evidence of human industry; that is, it begins after man had become man, and not before. It, therefore, commences where paleontologic biology leaves off, and does not embrace the question of his ancestry, which belongs to the latter science. Nevertheless, Dr. Brinton, well known as a distinguished archeologist, discusses the question of the ape-ancestry of man in an entertaining, and to some extent, instructive manner. But I have some fault to find with his article from a biological standpoint, and as it is calculated to encourage some popular prejudices, I propose to state them.

First there is to be noticed throughout, the flavor of Virchhoffism, which has been so vigorously exploited by Haeckel. Virchow appears to be unalterably opposed to the hypothesis of the ape-ancestry of man, and he uses frequent opportunities of casting ridicule on it. He even goes so far as to ignore, when convenient to his argument, such evidence as there is in support of it, in a way which does not impress me with his capacity for fairness. His conspicuous fallacy is his neglect of the biological evidence for the doctrine of creation of organic species by descent, so far as regards man. This is so overwhelming, that biologists are a unit in believing in it. Man cannot be excluded, for his zoological affinities with the anthropoid apes are most pronounced. Man is not an example of an isolated type, of which many can be found among animals and plants, but his relatives are conspicuously close to him in structure, so that if evolution is true, man is one of the most evident illustrations of it. Yet Brinton says "a dozen years ago when Darwinism was at its height, an advanced scientific thinker would have felt compelled to maintain that the species man was necessarily a de-

¹ This department is edited by H. C. Mercer, University of Pennsylvania.

² The Beginning of Man and the Age of the Race by Dr. D. G. Brinton; *The Forum*, Dec., 1893, p. 452.

velopment of some lower mammal." I do not hesitate to say that Darwinism (i. e. evolution) was never at a greater "height" than it is at present. It is also highly uncomplimentary to the "scientific thinker" to charge him with holding views on account of the "height" of any opinion, rather than on the evidence.

The type of man of the paleolithic age, is stated by Brinton to be a fiction which "furnished imaginative writers with the compound creature they pictured in their books as our common ancestor," etc. He then proceeds to discredit this "compound" by showing that some mistakes were made by some investigators in some points, although when he says that the Neanderthal remains belong to a visibly diseased subject, he asserts more than has been proven. He also alleges that the depressed forehead and prominent superciliary ridges of various paleolithic skulls that have been discovered, are no indication of pithecoïd origin, since they can be found occasionally among men of existing races! An argument of no value whatever, since if all low types necessarily disappeared, man would be the only animal; no monkeys ought to exist; no insects, no Amoebas! Evolution does not attempt to prove that nothing has stood still! But our author has nothing to say about the jaws of Naulette and Shipka, and the man and woman of Spy. It is on just these important remains that Virchow is silent also!

But he does have something to say on the tritubercular superior molar³ and the lemuroid affinities of the Anthropomorpha (man and ape). Referring to the author of the present review, he says: "An eminent naturalist discovered that in a considerable number of people the tubercles on the teeth resemble those of lemurs more closely than those of monkeys. Hence he promptly drew the conclusion that the descent of man was directly from the lemurs and not from the monkeys, as the prevailing impression has been." Dr. Brinton has advanced in his views a little. He at one time declared that this statement as to the structure of the molar teeth in the higher as compared with the lower races and the apes had been "refuted" by Allen and Virchow. Soon after this, my statements were entirely confirmed by Topinard, who after a full examination of six hundred dentitions de-

³ The reviewer of my paper in the April, '93 *Naturalist* on *The Genealogy of Man*, says of the tritubercular molar, that it is only the long known "microdontie" of civilized races. (*Archiv. für Anthropologie*, 1893). The reviewer evidently does not know what the tritubercular molar is nor what it signifies. It is not necessarily microdont, nor is it confined to civilized man. He has evidently not read my paper on the subject or he would not have remarked that I give no figures as to its predominant occurrence in the Esquimaux. (See *Am. Journ. Morphology*, July, 1888).

clared that man from having had four tubercles above and five below, would in some distant future have three above and four below. But he added that the theory of descent from lemurs is "not sustained" or "is premature." This latter question is one for paleontological biologists to decide, and Prof. Topinard did not even discuss the evidence from this standpoint. There is, however, good reason to suppose that the anthropoids (not man only) did descend from lemuroids and not from monkeys. Since Dr. Brinton's article was written, Dr. Forsyth Major has described an extinct *pliocene* lemur from Madagascar nearly as large as a chimpanzee, with tritubercular superior molars. I look for future discoveries to demonstrate the truth of the lemurine descent of the Anthropoids, and that the monkeys (Ceropithecidae) are a side branch and not in the direct line.

The descent of man from the Anthropoids is antagonized by Virchow because some of the pithecoïd characters of man are not prenatal, but only appear in later growth stages and cannot therefore be inherited. And if he can find a mechanical cause for the character, so much the more certain is this conclusion in his opinion. An example of this is the ape-character found among various men ancient and modern, the platycnemic or compressed tibia. This Virchow alleges is not a mark of affinity to the apes, where it is universal, but that it is produced by a peculiar use of the muscles of the lower leg, especially of the anterior ones. This, however, only transfers the evidence from the bones to the muscles. The tibial form of the apes, it may be inferred, is produced in the same way as in man, and if it is so produced in men, we learn that in such cases the muscles and their use are like those of the apes. Prof. Virchow does not probably know, that if inheritance be believed, the entire osseous skeleton of the vertebrata has been moulded by the strains, pressures and impacts to which it has been subjected, and that these are directly or indirectly due to muscular contraction. The supposition that prognathism is not inherited from apes because it is not present in the foetus, is equally untenable. The change of shape of the relations of the cranial bones called prognathism, is common to all vertebrata, and is only delayed, more in apes, most in man.

But Dr Brinton, like many other objectors to evidence of a plain and unadorned character, has his *Deus ex machina*. "Genius is ever inexplicable" he says. True; but the shapes of bones and teeth are not, and the brains of the genius contain the structural reasons for their functions, although we have not yet seen them. "A family of, we know not which of the higher mammals, perhaps, the great tree ape, which then

lived in the warm regions of central France, may have produced a few 'sports,' widely differing physically and mentally from the parents, and these 'sports' were the ancestors of man." Here we have a theory submitted to biologists, which is not supposed to be Darwinism or apeism, and yet it bears a strong family resemblance to both. To my vision, it appears inconsistent with some of what has gone before. Its special mission appears to be, to get rid of the "missing link." But he cannot be gotten rid of so easily. "This is a theory" Brinton says "which is as good as another." But it is not as good as another, until all the ape characters of man, recent and paleolithic, are explained away. In fact I suspect that the "sporting" is altogether confined to the theory! for paleontology does not give any ground for supposing that sports have any part in the general advance which we call evolution. The process has been by the gradual accumulation of increment after increment. Besides, the "tree ape" turns out to have been a baboon!

E. D. COPE.